



Playground forces teacher notes

Key Stage 1

Science:

- Pushes and pulls as forces
- Pushes and pulls change the movement of things

Overview

This activity allows children to explore forces, pushes and pulls and what they feel like. Children then think about the forces on a Red Arrows pilot.

1. Feeling forces in the playground

NOTE: a suitable risk assessment must be performed before carrying out any practical activity.

The use of any playground equipment should be under supervision and within the manufacturers permitted use of the equipment.



Activity 1: Feeling forces in the playground

Children use different playground equipment to feel the forces that are generated during movement and changes of direction.

Children also see that unless a push or pull is used, the equipment (and themselves) stay still. So pushes and pulls cause changes in movement.

Preparation

Access to playground equipment such as:

- Swings
- See-Saw
- Roundabout
- Slide
- Discussion prompt questions (attached below) – copy and separate each piece of equipment as appropriate
- Internet access to show Red Arrows video clip
<http://news.bbc.co.uk/1/hi/england/8236895.stm>

Activity Notes

Have children experience the range of equipment in the playground. To add some structure, have the children to do the following:

- Sit still on the piece of equipment.
What do they feel? Does anything happen?
- What needs to happen to get the equipment moving?
Can they move to get the equipment moving? For example swinging legs on the swing?
- What happens when someone gives them a push or a pull?
This is an example of applying an external force.
- What do they feel when the equipment is moving?
- How does it feel as the equipment is slowing down?
- What force pulls them down the slide?

Upon return to the classroom have children talk about their experiences in pairs and small groups. Use the prompt cards for direction. How did the pushes or pulls change their movement on the equipment?

Conclude by showing the Red Arrows video clip at:
<http://news.bbc.co.uk/1/hi/england/8236895.stm>

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Have children imagine what it must feel like being a Red Arrows pilot in a jet aeroplane as it turns and manoeuvres at high speed.

Extension

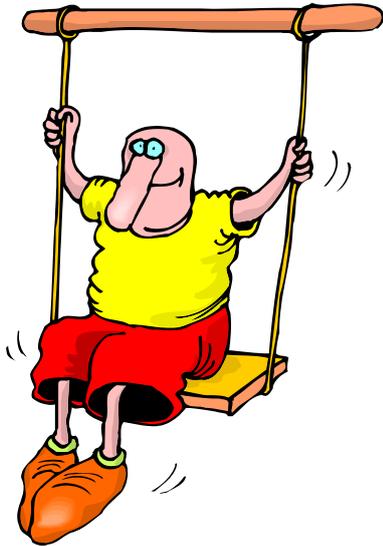
Use creative writing to describe the effects of forces:

"What would the world be like if there were only pushes but no pulls?"

"If I was a Red Arrows pilot."

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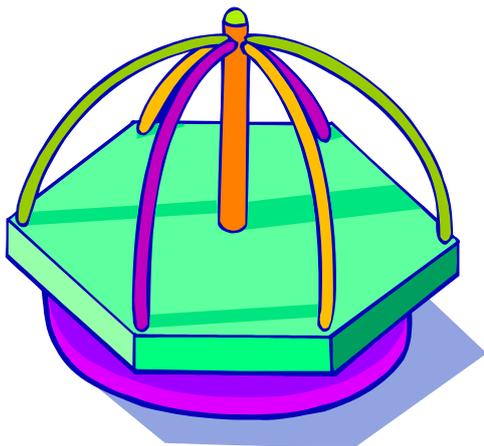


What was it like on the swings?

Did you move on your own?

What happened when you were given a push?

How did it feel when you were swinging?



What was it like on the roundabout?

Did you move on your own?

What happened when you were given a push?

How did it feel when you were moving round?

Did you need to hold on tightly?



What was it like on the see-saw?

Did you move when you both sat still?

How did you make yourself go up and down?

How did it feel when you were going up and down?

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What was it like on the slide?

What made you slide?

How did it feel when you were sliding?

What would it be like if the slide was flat?

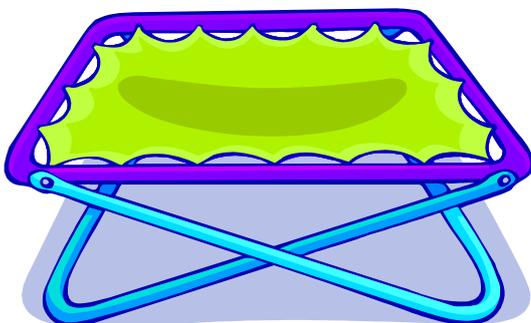


What was it like on the wobbly seat?

Was it easy to keep your balance?

What made you rock about?

Did you have to hold on tight?



What was it like on the trampoline?

Did you move when you stood still?

How did you make yourself go up and down?

How did it feel when you were going up and down?